

What is Claimed is:

1 1. A tunable two-pole passive notch filter circuit for attenuating select
2 frequencies of a multi-frequency CATV signal, comprising:
3 an input for receiving a multi-frequency CATV signal;
4 an output for transmitting a portion of the multi-frequency CATV signal; and
5 a filter network for attenuating a band of frequencies from said multi-frequency
6 signal, said filter network comprising three branches A, B, and C, wherein branch A and
7 branch B are connected in parallel and are arranged in series connection between the input
8 and output, branch A comprises an inductor, branch B comprises an adjustable tank circuit,
9 and branch C comprises an adjustable electrical resonator.

1 2. The tunable two-pole passive notch filter circuit of claim 1, wherein said
2 adjustable electrical resonator comprises a parallel LC circuit shunted between branch C and
3 ground.

1 3. The tunable two-pole passive notch filter circuit of claim 1, wherein said
2 branch B further comprises a stabilizing inductor connected between said adjustable tank
3 circuit and said output.

1 4. The tunable two-pole passive notch filter circuit of claim 2, wherein said
2 branch B further comprises a stabilizing inductor connected between said adjustable tank
3 circuit and said output.

1 5. The tunable two-pole passive notch filter circuit of claim 1, wherein said
2 branch C further comprises a first capacitor connected between said input and said adjustable
3 electrical resonator.

1 6. The tunable two-pole passive notch filter circuit of claim 2, wherein said
2 branch C further comprises a first capacitor connected between said input and said adjustable
3 electrical resonator.

1 7. The tunable two-pole passive notch filter circuit of claim 3, wherein said
2 branch C further comprises a first capacitor connected between said input and said adjustable
3 electrical resonator.

1 8. The tunable two-pole passive notch filter circuit of claim 4, wherein said
2 branch C further comprises a first capacitor connected between said input and said adjustable
3 electrical resonator.

1 9. The tunable two-pole passive notch filter circuit of claim 1, wherein said
2 branch C further comprises a second capacitor connected between said adjustable electrical
3 resonator and said output.

1 10. The tunable two-pole passive notch filter circuit of claim 2, wherein said
2 branch C further comprises a second capacitor connected between said adjustable electrical
3 resonator and said output.

1 11. The tunable two-pole passive notch filter circuit of claim 3, wherein said
2 branch C further comprises a second capacitor connected between said adjustable electrical
3 resonator and said output.

1 12. The tunable two-pole passive notch filter circuit of claim 4, wherein said
2 branch C further comprises a second capacitor connected between said adjustable electrical
3 resonator and said output.

1 13. The tunable two-pole passive notch filter circuit of claim 5, wherein said
2 branch C further comprises a second capacitor connected between said adjustable electrical
3 resonator and said output.

1 14. The tunable two-pole passive notch filter circuit of claim 6, wherein said
2 branch C further comprises a second capacitor connected between said adjustable electrical
3 resonator and said output.

1 15. The tunable two-pole passive notch filter circuit of claim 7, wherein said
2 branch C further comprises a second capacitor connected between said adjustable electrical
3 resonator and said output.

1 16. The tunable two-pole passive notch filter circuit of claim 8, wherein said
2 branch C further comprises a second capacitor connected between said adjustable electrical
3 resonator and said output.

1 17. The tunable two-pole passive notch filter circuit of claim 1, wherein said
2 adjustable tank circuit and said adjustable electrical resonator each include a variable inductor
3 for adjusting the resonant frequency thereof to thereby adjust the poles of said circuit.

1 18. The tunable two-pole passive notch filter circuit of claim 1, wherein said
2 adjustable tank circuit and said adjustable electrical resonator each include a variable
3 capacitor for adjusting the resonant frequency thereof to thereby adjust the poles of said
4 circuit.

1 19. A tunable two-pole passive notch filter circuit for attenuating select
2 frequencies of a multi-frequency CATV signal, comprising:
3 an input for receiving a multi-frequency CATV signal;
4 an output for transmitting a portion of the multi-frequency CATV signal; and
5 a filter network for attenuating a band of frequencies from said multi-frequency
6 signal, said filter network comprising three branches A, B, and C, wherein branch A
7 comprises an inductor, branch B comprises an adjustable tank circuit, and branch C
8 comprises an adjustable electrical resonator connected to at least one of the input or the
9 output, and wherein branch A and branch B are connected in parallel and are arranged in

10 series connection between the output and a second inductor, said second inductor arranged in
11 series between the input and branches A and B.

1 20. The tunable two-pole passive notch filter circuit of claim 19, wherein said
2 adjustable electrical resonator comprises a parallel LC circuit shunted between Branch C to
3 ground.

1 21. The tunable two-pole passive notch filter circuit of claim 19, wherein said
2 branch B further comprises a stabilizing inductor connected between said adjustable tank
3 circuit and said output.

1 22. The tunable two-pole passive notch filter circuit of claim 20, wherein said
2 branch B further comprises a stabilizing inductor connected between said adjustable tank
3 circuit and said output.

1 23. The tunable two-pole passive notch filter circuit of claim 19, wherein said
2 branch C further comprises a first capacitor connected between said input and said adjustable
3 electrical resonator.

1 24. The tunable two-pole passive notch filter circuit of claim 20, wherein said
2 branch C further comprises a first capacitor connected between said input and said adjustable
3 electrical resonator.

1 25. The tunable two-pole passive notch filter circuit of claim 21, wherein said
2 branch C further comprises a first capacitor connected between said input and said adjustable
3 electrical resonator.

1 26. The tunable two-pole passive notch filter circuit of claim 22, wherein said
2 branch C further comprises a first capacitor connected between said input and said adjustable
3 electrical resonator.

1 27. The tunable two-pole passive notch filter circuit of claim 23, wherein said
2 branch C further comprises a second capacitor connected between said adjustable electrical
3 resonator and said output.

1 28. The tunable two-pole passive notch filter circuit of claim 24, wherein said
2 branch C further comprises a second capacitor connected between said adjustable electrical
3 resonator and said output.

1 29. The tunable two-pole passive notch filter circuit of claim 25, wherein said
2 branch C further comprises a second capacitor connected between said adjustable electrical
3 resonator and said output.

1 30. The tunable two-pole passive notch filter circuit of claim 26, wherein said
2 branch C further comprises a second capacitor connected between said adjustable electrical
3 resonator and said output.

1 31. The tunable two-pole passive notch filter circuit of claim 19, wherein said
2 adjustable tank circuit and said adjustable electrical resonator each include a variable inductor
3 for adjusting the resonant frequency thereof to thereby adjust the poles of said circuit.

1 32. The tunable two-pole passive notch filter circuit of claim 19, wherein said
2 adjustable tank circuit and said adjustable electrical resonator each include a variable
3 capacitor for adjusting the resonant frequency thereof to thereby adjust the poles of said
4 circuit.

1 33. A tunable two-pole passive notch filter circuit, comprising:
2 an input;
3 an output;
4 an adjustable tank circuit arranged in series connection between said input and said
5 output;

6 a fourth inductor arranged in parallel with said adjustable tank circuit, and in series
7 connection between said input and said output; and
8 an adjustable resonant circuit arranged in series connection between said input and
9 said output.

1 34. The tunable two-pole passive notch filter circuit of claim 33, further
2 comprising a third inductor arranged in series connection between said adjustable tank circuit
3 and said output.

1 35. The tunable two-pole passive notch filter circuit of claim 34, further
2 comprising a fifth inductor arranged in series connection between said input and said
3 adjustable tank circuit.

1 36. The tunable two-pole passive notch filter circuit of claim 35, further
2 comprising a third capacitor arranged in series connection between said input and said
3 adjustable resonant circuit and a fourth capacitor arranged in series connection between said
4 adjustable resonant circuit and said output.

1 37. The tunable two-pole passive notch filter circuit of claim 36, wherein said
2 adjustable resonant circuit is shunted between ground and said third and fourth capacitors.